🎥 Using Cinemachine for Dynamic Camera Effects

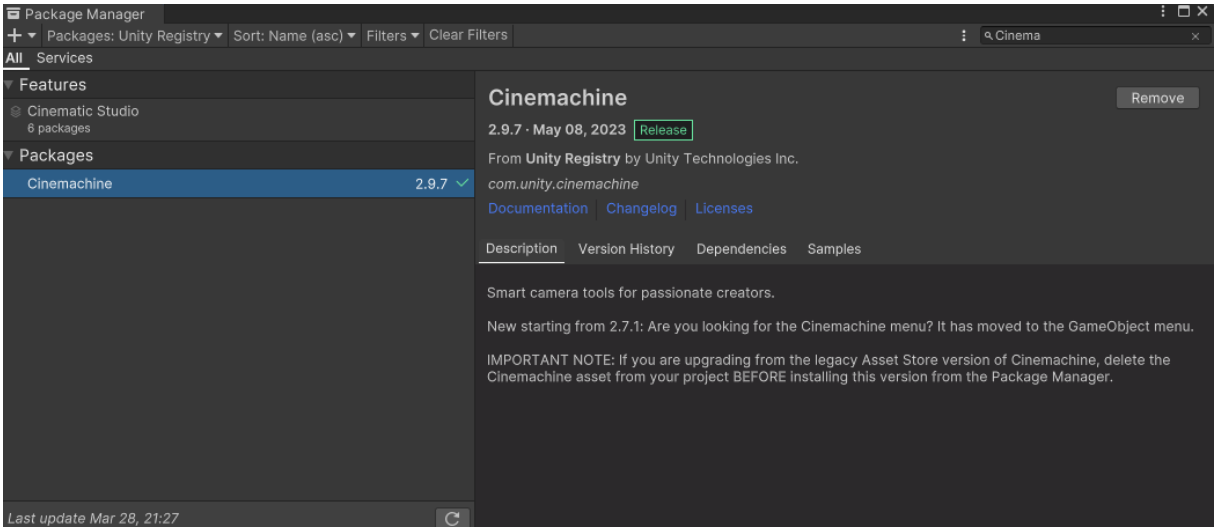
This package requires **Cinemachine**, a powerful Unity tool that allows for **smooth camera transitions, dynamic tracking, and effects like camera shakes**. It can be used for **player-following cameras, enemy-focused cameras, or event-triggered effects**.

📦 1. Installing the Cinemachine Package

Before using Cinemachine, you need to install it from the Unity Package Manager:

🛠 Steps to Install:
1. Open **Unity**.
2. Go to **Window > Package Manager**.
3. In the **Unity Registry** tab, search for **Cinemachine**.
4. Click **Install**.

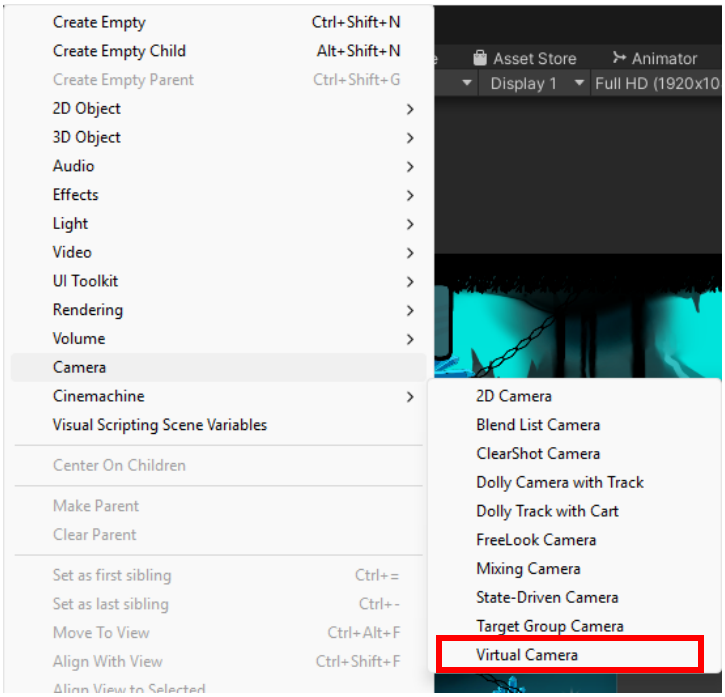
Once installed, you can start setting up the camera system! 🎬



🎮 2. Setting Up a Cinemachine Virtual Camera (VR Cam)

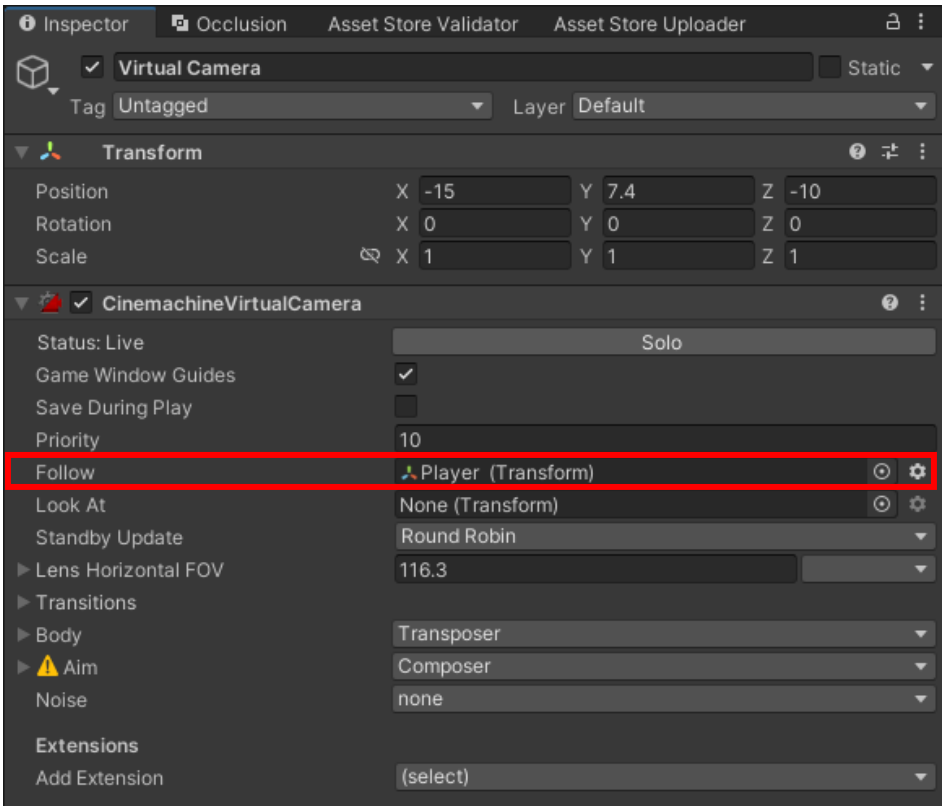
A **Virtual Camera (VR Cam)** is a dynamic camera that follows objects or creates cinematic effects.

🛠 Steps to Create a VR Cam:
1. In the **Hierarchy**, go to **GameObject > Cinemachine > Cinemachine Virtual Camera**.



2. Select the **Main Camera**, and in the **Inspector**, click **Add Component > Cinemachine Brain**.

   - 🧠 The **Cinemachine Brain** component allows the Main Camera to switch between different Virtual Cameras dynamically.
     If you want the **VR Cam to follow the player**, go to the **Inspector of the VR Cam**, and set the **Follow Target** to the **player's GameObject**.



✅ **Now your camera will smoothly follow the player!** 🎥👀

💥 3. Adding Camera Shake with Cinemachine Impulse Source

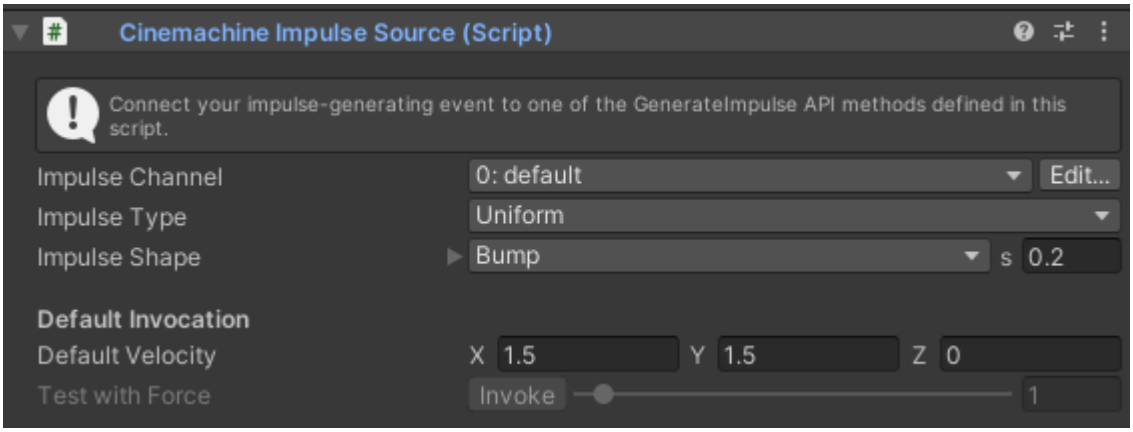
To create a **camera shake effect** (for explosions, enemy attacks, or impacts), you need to use **Cinemachine Impulse**.

🔧 **Steps to Enable Camera Shake:**

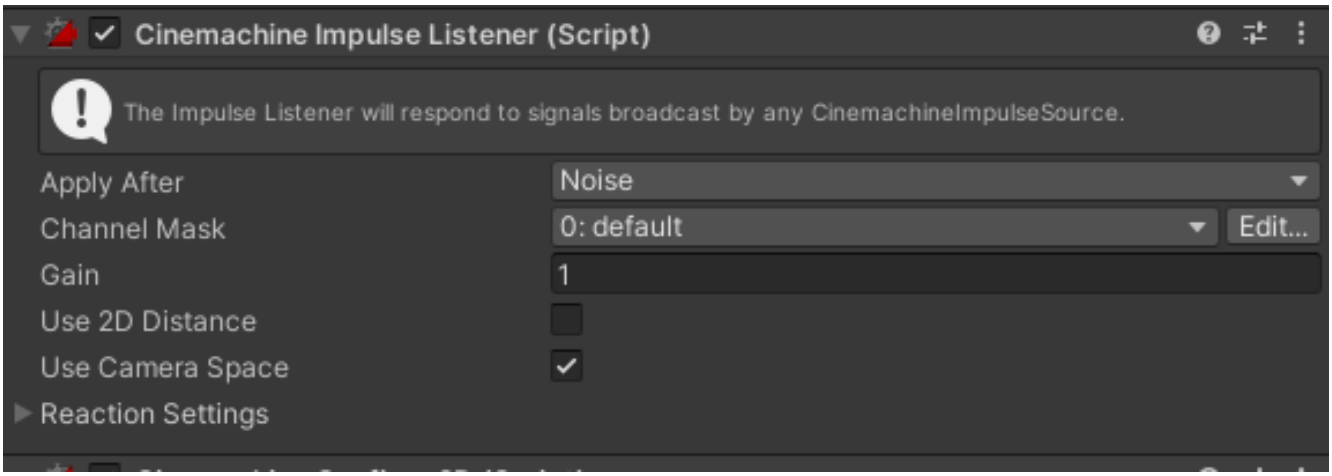
First on the **object that triggers the shake** (e.g., explosion, enemy attack), open the **Inspector**. Then click **Add Component > Cinemachine Impulse Source**.

📌 This component generates an impulse signal when activated, shaking the camera.
Customize the Impulse:

- Adjust **Amplitude** (shake strength) & **Frequency** (shake speed) to match your effect.
  Ensure the Main Camera can receive the shake signal:



- Select the **Cinemachine Virtual Camera (VR Cam)** and **add a "Cinemachine Impulse Listener" component**.



- 🏃 This allows the VR Cam to react to the impulse generated by the event.

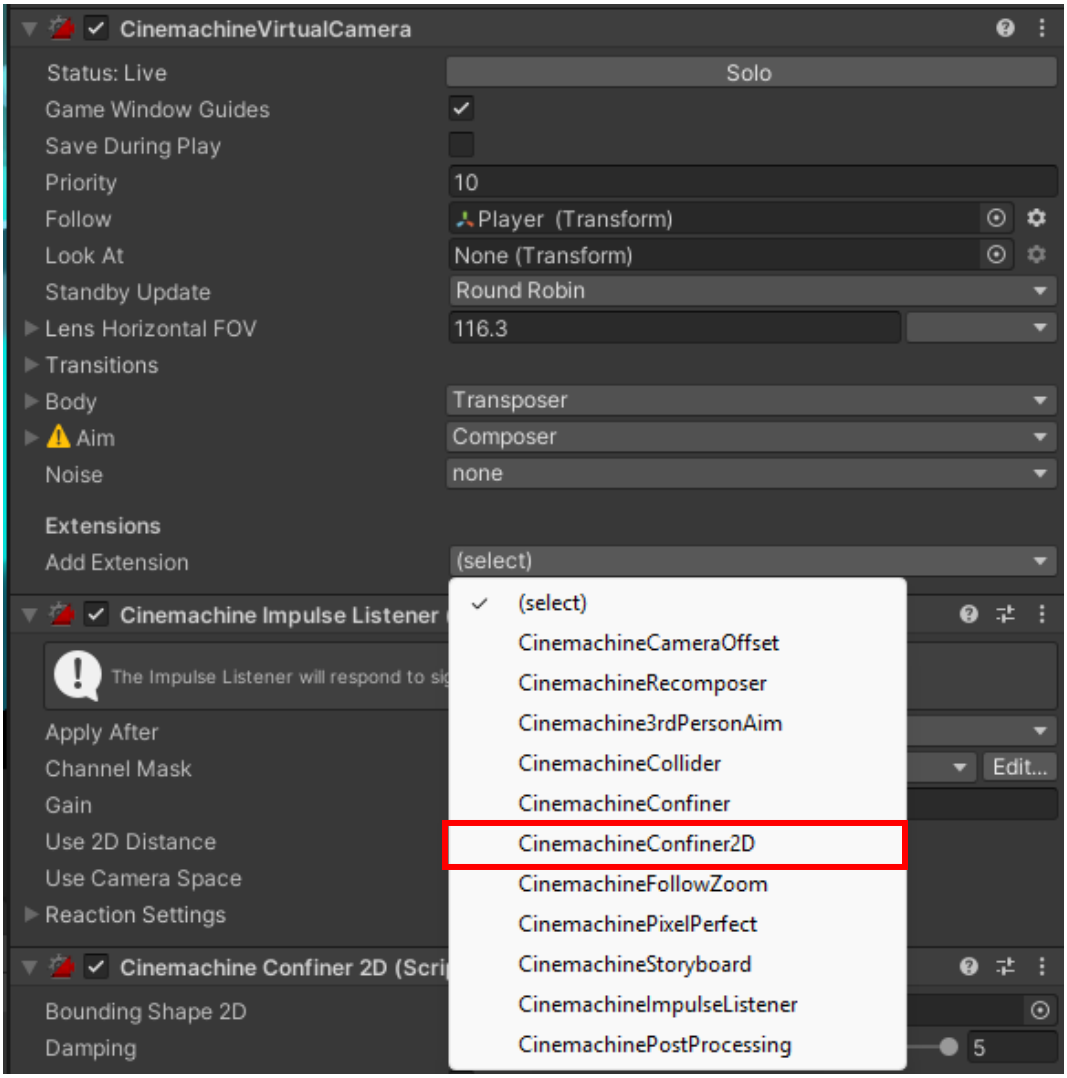
✅ **Now, the camera will shake dynamically during gameplay!** 🎮

🗺 4. Adding Camera Confiners (Preventing the Camera from Moving Too Far)

If you want to **limit the camera's movement** within a specific area, you need a **Cinemachine 2D Confiner**.

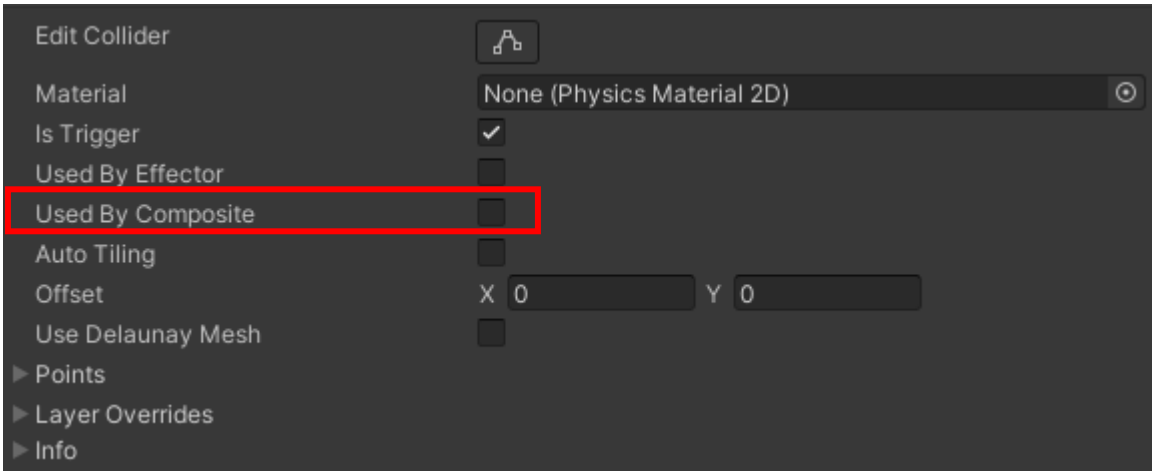
🔧 **Steps to Add a Camera Confiner:**

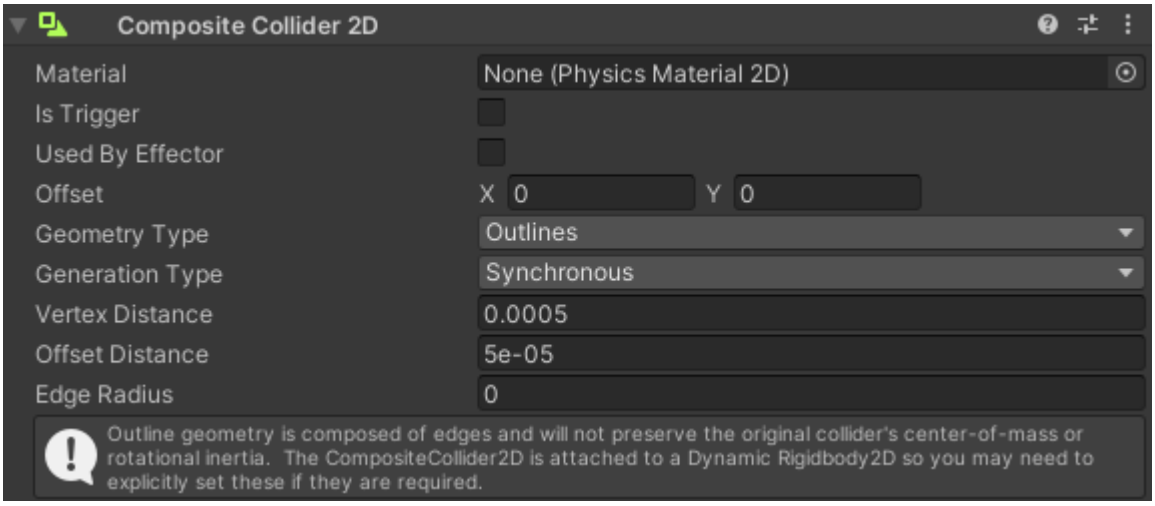
1. Select the **Cinemachine Virtual Camera (VR Cam)**.
2. In the **Inspector**, click **Add Extension > Cinemachine 2D Confiner**.



3. **Create a Boundary Object:**

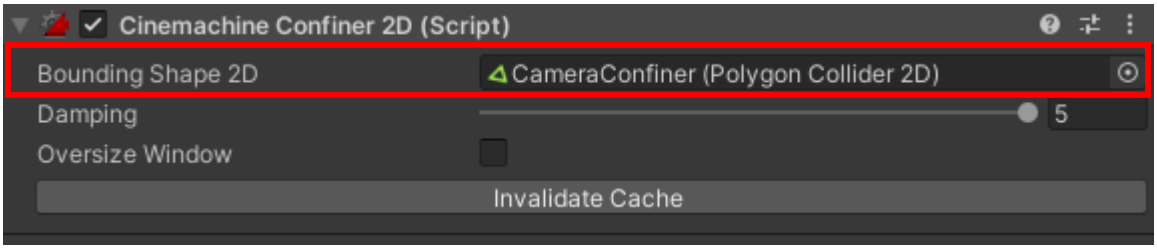
- ➕ Create a **new empty GameObject**.
- ☐ 2 Solutions : Or add a **Polygon Collider 2D** or add any 2D Collider as long as you Check the box "Use by Composite" to ensure proper collision detection and add the Composite Collider 2D).





4. **Assign the Collider to the Confiner:**

- Go back to the **Cinemachine Virtual Camera**, and in the **Cinemachine 2D Confiner** component, set the **Bounding Shape 2D** to the new collider object.



✅ **Now, the camera is locked within a specific area that you choose, preventing it from moving too far beyond the game level!** 🌎 🚫

⚠️ Final Notes & Checklist

✅ **Cinemachine Brain** must be attached to the **Main Camera** 🧠📸
✅ **VR Cam must have a Follow Target** if you want it to track a character 🏃‍♂️🎥
✅ **Impulse Source must be present on objects that trigger camera shakes** 💥📸
✅ **Impulse Listener must be added to the VR Cam** for shake effects to work 🎮🔊
✅ **2D Confiner requires a Collider** with "Use by Composite" enabled to properly limit the camera's movement or just simply use a Polygon Collider 2D 🌍🚧